

PATENT ABSTRACTS OF JAPAN

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(54) INFORMATION RECORDER

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain an information recorder which eliminates a program reservation and can simply sound and picture record a predetermined program by signal processing program video information, recording it on a plurality of recording media, and generating program information based on an operator's selection. **SOLUTION:** The programs by the voice and/or picture of a plurality of channels are simultaneously received by a receiver 12, the respective programs are signal processed by a recording system signal processor 13, recorded on recording media in a first recorder 14, and the operator's program selection is accepted by a remote controller 17 and selection acceptor 18. Then, at least one program recorded on the medium of the recorder 14 is selected by a selection information generator 15 based on the selection, and the selected program is further transferred to the entirety or part of second recorders (20-a to 20-c) for recording the information on another storage media.

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CLAIMS

[Claim(s)]

[Claim 1] A receiving means to receive a program with two or more voice and/or images of each of a channel to coincidence, A recording system signal-processing means to perform signal processing for recording on each of that program, The 1st record means which records all or a part of each programs by which it has the 1st storage which memorizes information and said signal processing was performed to the 1st storage, A selection reception means to receive selection by the operator, and a program selection means to choose at least one program currently recorded on said 1st storage based on selection by the operator, For the 2nd record means and 2nd record means which records information on the 2nd storage It is the information recording device which is equipped with a program transfer means to transmit at least one program chosen by said program selection means, and is characterized by said 2nd record means recording the program transmitted from said program transfer means on said 2nd storage.

[Claim 2] It is the information recording device according to claim 1 characterized by to receive selection by the operator [as opposed to / read the information about each program currently recorded on said 1st storage, have further a selection-information generation means generate the selection information for choosing at least one program currently recorded on said 1st storage based on the information about each of that read program, and / said selection information in said selection reception means].

[Claim 3] The information recording device according to claim 2 characterized by having further a display means to display the selection information generated by said selection information generation means.

[Claim 4] The information recording device according to claim 2 or 3 characterized by said selection information being information generated using the service information

sent with broadcast of said program.

[Claim 5] Said selection reception means is an information recording device given in any of claims 1-4 characterized by receiving the keyword for choosing at least one program chosen by said operator they are.

[Claim 6] All the programs to which said signal processing was performed are inputted. In the inputted program Each program corresponding to the keyword received by said selection reception means is sent out to said program transfer means. It is the information recording device according to claim 5 which is further equipped with a record selection means to send out each program to which said other signal processing was performed to said 1st record means, and is characterized by said program transfer means transmitting each program further sent out from said record selection means to said 2nd record means.

[Claim 7] Said recording system signal-processing means is an information recording device according to claim 6 characterized by sending out the program information about said each program, and said record selection means sending out each program corresponding to the keyword to said program transfer means further based on the program information and said keyword.

[Claim 8] The information recording device according to claim 6 characterized by said keyword being the code of the program reservation for making the timed recording of a program.

[Claim 9] For those with two or more, and said program transfer means, said 2nd record means to record information on said 2nd storage is an information recording device given in any of claims 1-8 characterized by transmitting at least one program chosen by said program selection means to said all or a part of 2nd record means they are.

[Claim 10] Said 1st record means is an information recording device given in either of claims 1-9 characterized by recording each program to which said signal processing was performed from the field where the old program of the record time in the 1st storage is recorded when the program is recorded on all the record sections in said 1st storage.

[Claim 11] Said 1st storage is an information recording device given in any of claims 1-10 characterized by being the storage of the shape of a disk of two or more sheets they are.

[Claim 12] Said 2nd storage is an information recording device given in any of claims 1-11 characterized by being removable for said 2nd record means they are.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to information recording devices which record digital information, such as a magnetic disk, a digital audio tape recorder, or a digital video tape recorder.

[0002]

[Description of the Prior Art] In addition to the program by terrestrial broadcasting and satellite broadcasting service, about the program in recent years, the number of the programs itself set as the object of an image transcription has been increasing rapidly according to the substantial program on cable television.

[0003] When such a situation is taken into consideration, the case where the time zone in the condition that a viewer can watch such a program, and the time zone of the program which the viewer wants to watch are not in agreement is considered to increase increasingly from now on. Moreover, the cases where a viewer wants to record on videotape the hidden number group of the program which he is watching will also increase in number increasingly.

[0004] Then, in image transcription equipment like the conventional VTR, the approach of program reservation is in the approach for solving such a condition. If this becomes the set-up reservation time by setting it as the time zone of the program which wants to see the reservation time amount of an image transcription, the image transcription equipment with which the reservation time amount was set up will record the program to watch on videotape automatically.

[0005]

[Problem(s) to be Solved by the Invention] However, in having reserved the program recording on videotape like the above conventional image transcription equipments each time, it cannot respond to the above environments and information on an image cannot be processed efficiently.

[0006] Moreover, generally the problem of and failing to reserve for the troublesome actuation also had the viewer who senses that the actuation of program reservation itself is troublesome.

[0007] Furthermore, in the case of a viewer with two or more image transcription equipments, when the manufacturers of what can reserve the program of two or more channels to coincidence differed, reservation actuation also differed in many cases, and there was a problem that the reservation actuation itself was complicated further.

[0008] This invention aims at offering the information recording device which can be recorded or recorded on videotape, without making the program reservation itself unnecessary and failing to take a desired program simply in consideration of such a technical problem.

[0009]

[Means for Solving the Problem] A receiving means to receive the program according [this invention for solving such a technical problem] to two or more voice and/or

images of each of a channel to coincidence, A recording system signal-processing means to perform signal processing for recording on each of that program, The 1st record means which records all or a part of each programs by which it has the 1st storage which memorizes information and said signal processing was performed to the 1st storage, A selection reception means to receive selection by the operator, and a program selection means to choose at least one program currently recorded on said 1st storage based on selection by the operator, For the 2nd record means and 2nd record means which records information on the 2nd storage Having a program transfer means to transmit at least one program chosen by said program selection means, said 2nd record means is an information recording device which records the program transmitted from said program transfer means on said 2nd storage.

[0010] In addition, said information recording device reads the information about each program currently recorded on said 1st storage, and is further equipped with a selection-information generation means generate the selection information for choosing at least one program currently recorded on said 1st storage based on the information about each of that read program, and though said selection reception means receives selection by the operator to said selection information, it is good.

[0011] Moreover, even if said information recording device is further equipped with a display means to display the selection information generated by said selection information generation means, it is good.

[0012] Moreover, it is good though said selection information is information generated using the service information sent with broadcast of said program.

[0013] Moreover, though said selection reception means receives the keyword for choosing at least one program chosen by said operator, it is good.

[0014] Said information recording device inputs all the programs to which said signal processing was performed. Moreover, in the inputted program Each program corresponding to the keyword received by said selection reception means is sent out to said program transfer means. It has further a record selection means to send out each program to which said other signal processing was performed to said 1st record means, and though said program transfer means transmits each program sent out from said record selection means to said 2nd record means, it is still better.

[0015] Moreover, said recording system signal-processing means sends out the program information about said each program, and though said record selection means sends out each program corresponding to the keyword to said program transfer means based on the program information and said keyword, it is still better. [of a means]

[0016] Moreover, it is good though said keyword is the code of the program reservation for making the timed recording of a program. For example, it is good though it is a G code.

[0017] Moreover, though those with two or more and said program transfer means transmit at least one program chosen by said program selection means to said all or a

part of 2nd record means, they are good. [of said 2nd record means to record information on said 2nd storage]

[0018] Moreover, when the program is recorded on all the record sections in said 1st storage, though said 1st record means records each program to which said signal processing was performed from the field where the old program of the record time in the 1st storage is recorded, it is good.

[0019] Moreover, though said 1st storage is a storage of the shape of a disk of two or more sheets, it is good.

[0020] Furthermore, though said 2nd storage is removable for said 2nd record means, it is good.

[0021]

[Embodiment of the Invention] Hereafter, it explains, referring to a drawing about the gestalt of operation of this invention.

[0022] It explains referring to drawing 1 which is the block diagram about the information recording device concerning this invention which is the gestalt of the 1st operation. That is, 1st antenna 11-a is an antenna for receiving the broadcast wave sent from a certain satellite (it considers as Satellite A.). It is an antenna for receiving the broadcast wave to which 2nd antenna 11-b is sent from the satellite (it considers as Satellite B.) with which Satellites A differ. Here, Satellite A has two transponders A1 and A2, and Satellite B presupposes it that it has two transponders B1 and B-2.

[0023] A receive section 12 is a satellite broadcasting service receiving set which has 1st tuner 12-a, 2nd tuner 12-b, 3rd tuner 12-c, and 4th tuner 12-d. 1st tuner 12-a is a tuner which inputs a signal and recovers the signal corresponding to a transponder A1 from 1st antenna 11-a. 2nd tuner 12-b is a tuner which inputs a signal and recovers the signal corresponding to a transponder A2 from 1st antenna 11-a. 3rd tuner 12-c is a tuner which inputs a signal and recovers the signal corresponding to a transponder B1 from 2nd antenna 11-b. 4th tuner 12-d is a tuner which inputs a signal and recovers the signal corresponding to transponder B-2 from 2nd antenna 11-b.

[0024] The recording system signal-processing sections 13 are signal processing and a control circuit which processes error-correcting-code-izing, a modulation, etc. to the signal of the satellite broadcasting service which is sent from a receive section 12, and to which it restored, and carries out record control of the signal of the processed program to it.

[0025] The 1st recording apparatus 14 is a recording apparatus which records the signal of the program which has the storage (illustration abbreviation) of the shape of a disk of two or more sheets, and was processed by the storage in the recording system signal-processing section 13, for example, is DVD which records information on the large hard disk which records information on the magnetic-recording medium of the shape of a disk of two or more sheets, or the magneto-optic disk of two or more sheets. In addition to the image and sound signal of a program, the service

information (it is called SI.) about the program is also recorded on the storage of the 1st recording device 14.

[0026] The selection information generation section 15 is a circuit which reads SI about the program currently recorded on the storage of the 1st recording device 14, generates the selection information for choosing the program currently recorded on the storage, and outputs it in a menu format. A display 16 is television. The selection information of the menu format outputted from the selection information generation section 15 is displayed by the display 16.

[0027] Remote control 17 is the remote control unit which can carry out the remote control of the information recording device of the gestalt of this operation. An operator will perform selection to the program list 22 and the condition list 25 which are displayed on a display 16 and which are mentioned later using this remote control 17.

[0028] The selection reception section 18 is a control circuit which sends out the code which receives the code corresponding to the selection transmitted from remote control 17 based on an operator's selection by the infrared signal, changes it into an electrical signal, reads the starting address of a program from the selection-information generation section 15 based on the code after the conversion, and points out any of the starting address and 2nd recording device (20-a, 20-b, 20-c) they are.

[0029] The program transfer section 19 receives the code which points out the starting address of a program and any of the 2nd recording device (20-a, 20-b, 20-c) they are. [which are sent out from the selection reception section 18] It is the control circuit transmitted for any of the 2nd recording device (20-a, 20-b, 20-c) specified in code which read the program which begins from the starting address from the 1st recording device 14, and received it being.

[0030] The 2nd recording device (20-a, 20-b, 20-c) is the digital videocassette recorder which can record a program on videotape in digital one on a removable magnetic-recording tape (illustration abbreviation), respectively.

[0031] Next, actuation of the gestalt of this operation is explained.

(1) Receive the program of the explanation satellite broadcasting service of operation from reception to record, and explain actuation until it records the received program. In satellite broadcasting service, if it is going to receive two or more satellites to coincidence, since it is necessary to turn an antenna to the location of each of that satellite, an antenna is needed only for the number of satellites to receive. 1st antenna 11-a and 2nd antenna 11-b receive the broadcast wave sent from Satellite A and Satellite B, respectively.

[0032] Here, satellite broadcasting service is explained briefly. A satellite receives the electric wave transmitted from an earth station, does conversion and magnification of the frequency of the received electric wave using the repeater called a transponder, turns it to the earth and answers a letter. Generally, one satellite has two or more transponders, and each of a transponder turns the electric wave of a mutually

different frequency to the earth, and transmits. For this reason, when it is going to receive to coincidence the electric wave transmitted from two or more transponders, a tuner is needed only for the number of the transponders which want to receive.

[0033] A receive section 12 has 1st tuner 12-a corresponding to a transponder A1, 2nd tuner 12-b corresponding to a transponder A2, 3rd tuner 12-c corresponding to a transponder B1, and 4th tuner 12-d corresponding to transponder B-2. 1st tuner 12-a sends out the output bit stream obtained by tuning in and restoring to the electric wave corresponding to a transponder A1 among the electric waves of the satellite A received by 1st antenna 11-a. 2nd tuner 12-b sends out the output bit stream obtained by tuning in and restoring to the electric wave corresponding to a transponder A2 among the electric waves of the satellite A received by 1st antenna 11-a. 3rd tuner 12-c sends out the output bit stream obtained by tuning in and restoring to the electric wave corresponding to a transponder B1 among the electric waves of the satellite B received by 2nd antenna 11-b. 4th tuner 12-d sends out the output bit stream obtained by tuning in and restoring to the electric wave corresponding to transponder B-2 among the electric waves of the satellite B received by 2nd antenna 11-b.

[0034] (d) is the conceptual diagram showing the example of contents of the output bit stream sent out from 1st tuner 12-a, 2nd tuner 12-b, 3rd tuner 12-c, and 4th tuner 12-d, respectively from drawing 2 (a). As shown in drawing 2, multiplex [of the program for three channels] is carried out to the electric wave transmitted from transponders A1, A2, and B1 and B-2, respectively.

[0035] Time-axis multiplex [of the program information on channels 1-3] is carried out to the output bit stream of 1st tuner 12-a as shown in drawing 2 (a). A longitudinal direction shows the direction of a time-axis. The output bit stream is divided into the packet for every predetermined time, and the data of the program of channels 1-3 can be distributed to the divided packet in order, respectively. For example, what is necessary is just to collect the packets of CH No.1, in taking out the program information on a channel 1. The same is said of a channel 2 or 3. Moreover, also about the output bit stream of the 2nd, 3rd, and 4th tuners, as shown in drawing 2 (b), (c), and (d), respectively, it is the same as that of the output bit stream of the 1st tuner. Therefore, a receive section 12 can receive the program for a total of 12 channels to coincidence.

[0036] Moreover, each data of that of 12 channels contains a video signal, a sound signal, and SI. SI carries out, as shown in a kind of race card showing the information on the program which it is broadcast by each channel or is due to be broadcast. As an example of the contents of SI, the name of a program, easy explanation of the contents, broadcast time, the genre of a program, an age limit code, a broadcasting station name, etc. are mentioned. If such information is displayed by the receiving set side, a viewer can choose the program which suited liking of it from many channels.

[0037] Thus, since many channels can be collectively transmitted in one satellite, the

transmitting cost per channel can be lowered. Moreover, for many channels, each channel is used as the special channel which specialized in the program of one genre, and it becomes possible to offer large service of the width of face of the selection doubled with liking of a viewer.

[0038] Drawing 3 is the conceptual diagram showing signs that the 1st recording device 14 records the data about the output bit stream sent out from a receive section 12 according to record control of the recording system signal-processing section 13. Although the actual storage (illustration abbreviation) of the 1st recording apparatus 14 consists of two or more magnetic disks, drawing 3 is drawing which expressed the actual storage as a disk of one sheet on a concept. There are four trucks for recording the information about four output bit streams shown by drawing 2 sent out from a receive section 12 gone around on the storage 21 shown in drawing 3. The information from which the output bit stream for three channels received in each of the 1st to 4th tuner was processed in the recording system signal-processing section 13 is recorded on each of that truck. The full capacity of these four trucks is equivalent to the full capacity of the actual storage of the 1st recording device 14. By the way, let full capacity of the four trucks be the thing of the program of a total of 12 channels received in a receive section 12 which is generally equivalent to the amount of information of the part on the 1st.

[0039] The recording system signal-processing section 13 inputs the output bit stream for 12 channels sent out from a receive section 12 in the data format shown in drawing 2. That is, the recording system signal-processing section 13 receives separately the output bit stream sent out from the 1st to 4th tuner (12-a – 12-d), respectively, and performs record processing for recording on the storages 21, such as error detection correction coding and a modulation, at each of that output bit stream that received. And the recording system signal-processing section 13 performs control for recording each output bit stream to which the record processing was performed on the truck with which it corresponds on the storage 21 of the 1st recording device 14.

[0040] The 1st recording apparatus 14 is recorded on the truck with which it corresponds on the storage 21 with which self has contained each output bit stream to which record processing was performed according to control of the recording system signal-processing section 13.

[0041] By the way, it presupposed “It is generally equivalent to the amount of information of the part on the 1st” in the above-mentioned explanation because the amount of information recorded on a storage 21 changed with the compressibility of the compression processing performed by the transmitting side. Moreover, the time amount which is not broadcast is because the object of record does not become.

(2) Choose the program for which the explanation operator of operation in the case of choosing the program currently recorded temporarily and recording independently asks from the 1st recording device 14, and explain the actuation in the case of making

the selected program record on another storage, referring to drawing 1 . The information recording device in the gestalt of this operation is always performing reception of satellite broadcasting service, and processing of record. Therefore, it is received in a receive section 12 and, about 24 hours after, the program information recorded on the storage 21 of the 1st recording device 14 is deleted by overwriting new program information. Therefore, before the program for which it asks is deleted, an operator needs to choose the program for which it asks from the 1st recording device 14, and needs to make the selected program record for any of 2nd another recording device (20-a – 20-c) being. In addition, about the time of day when this overwrite is performed, it can be set as the time of day of arbitration.

[0042] An operator presses the menu display key (illustration abbreviation) in remote control 17, turning the transmitting section (illustration abbreviation) of remote control 17 to the selection reception section 18, in order to display on a display 16 the selection information of the menu format for choosing the program currently recorded on the storage 21 of the 1st recording device 14. Remote control 17 will transmit the menu display code corresponding to the key to the selection reception section 18, if the menu display key is pressed. The selection reception section 18 receives the menu display code transmitted from remote control 17 by the infrared signal, changes it into an electrical signal, and sends it to the selection information generation section 15. And the selection information generation section 15 generates the selection information of a menu format using SI about two or more programs currently recorded on the storage 21 of the 1st recording device 14 according to the menu display code.

[0043] Here, it explains, referring to drawing 4 which shows the example about generation of the selection information of a menu format. The selection information generation section 15 reads each program name from SI currently recorded on the storage 21 of the 1st recording device 14, and creates the program name list 22 for every channel number as shown in drawing. A channel number is allotted to ascending order by the column beside the program name list 22, and the program name currently recorded on each line under each of that channel number with the channel number is allotted to the old order of record time of day.

[0044] Next, it explains, referring to drawing 5 which shows the example about the display of the program name list 22 generated in the selection information generation section 15. The selection information generation section 15 displays on the screen 23 some program name lists 22 shown in drawing 4 in consideration of the size of Screen 23 of a display 16, as shown in drawing 5 . While an operator looks at some program name lists 22 currently displayed on the screen 23, the arrow key (illustration abbreviation) of the four directions in remote control 17 will be operated, the cursor 24 in the screen 23 will be moved, and a program to record on the 2nd recording device 14 will be chosen.

[0045] Next, it explains, referring to drawing 5 , drawing 6 , and drawing 7 which show

the example about the actuation corresponding to selection by the operator to whom it was carried out while looking at the program name list 22 with which the part was displayed. If the operator pushed the arrow key of the right in remote control 17 when the cursor currently displayed on Screen 23 was cursor 24-a located in the rightmost column, as shown in drawing 5 , as shown in drawing 6 , some program name lists 22 equivalent to the part of channels 4-6 are displayed on Screen 23. And the cursor after the actuation is set to cursor 24-b.

[0046] Supposing similarly an operator pushes the arrow key of the bottom in remote control 17 when the cursor currently displayed on Screen 23 is cursor 24-c located in the bottom line as shown in drawing 5 As shown in drawing 7 , the display of channels 1-3 remains as it is in Screen 23, and some program name lists 22 equivalent to the part under [which was not able to be displayed] it are expressed on it as the program name list 22 of parts in drawing 5 . And the cursor after this actuation is set to cursor 24-d.

[0047] The above display and control of selection are performed in the selection information generation section 15. An operator chooses a program to record on the 2nd recording device 14, looking at some program name lists 22 displayed on Screen 23 of a display 16 by control of the selection information generation section 15. An operator will press the selection key (illustration abbreviation) prepared in remote control 17, turning the transmitting section of remote control 17 to the selection reception section 18, if the selection is decided. Remote control 17 will transmit the select code corresponding to the key to the selection reception section 18, if the selection key is pressed. The selection reception section 18 receives the select code transmitted from remote control 17 by the infrared signal, changes it into an electrical signal, and sends the select code after conversion to the selection information generation section 15.

[0048] The selection information generation section 15 will read the status information which shows the condition of the 2nd recording device (20-a - 20-c) from the program transfer section 19, if a select code is inputted from the selection reception section 18. The status information is the information which shows whether it is in the condition which can record each of the 2nd recording device (20-a - 20-c), and information which shows the residue time amount of the magnetic-recording tape in each of that equipment.

[0049] Next, it explains, referring to drawing 8 which shows the example about selection of another recording device which records the image information of the program chosen by the operator. The selection information generation section 15 creates the condition list 25 in which the condition of the 2nd recording device (20-a - 20-c) as shown in drawing 8 is shown based on the status information read from the program transfer section 19. The image transcription condition (with under the lack of a tape residue and an image transcription, the image transcription possibility of, and no tape) about each of the 2nd recording device (20-a - 20-c) and the residue time

amount of a magnetic-recording tape are displayed on the condition list 25.

[0050] For example, if the image transcription time amount of the program which the operator chose was 1 hour, the selection information generation section 15 displays on Screen 23 of a display 16 the condition list 25 on which the black dot 26 was described in the column of selection of VTR-3 which show 2nd recording device 20-c which can be recorded on videotape. If this is satisfactory for an operator, he will press the selection key of remote control 17. If the select code corresponding to the selection key is inputted through the selection reception section 18, the selection information generation section 15 will read the starting address of the program which the cursor 24 displayed on Screen 23 of a display 16 at the end points out from the 1st recording device 14, and will transmit to the selection reception section 18 with the code which points out 2nd recording device 20-c chosen by said condition list in the read starting address. And the selection reception section 18 transmits the starting address and the code which points out 2nd recording device 20-c to the program transfer section 19.

[0051] By the way, a black dot 26 is the range of the column of selection of the condition list 25, and moves up and down by the up and down arrow key of remote control 17. Moreover, a black dot 26 is not displayed, when two or more equipments which can be recorded on videotape are displayed by one of columns [them] in a certain case and one set does not have them, either. Here, when one set does not have equipment which can be recorded on videotape, either, an operator needs to change into the condition that a new magnetic-recording tape is put in and at least one of the 2nd recording devices (20-a - 20-c) can be recorded.

[0052] The program transfer section 19 transmits the read image information to 2nd recording device 20-c specified based on the code which was beginning to read the image information of the program which corresponds from the storage 21 of the 1st recording device 14 one by one based on the transmitted starting address, and was transmitted with the starting address. The program transfer section 19 repeats processing of the sequential read-out and transmission until it transmits all the image information of the program of the starting address. 2nd recording device 20-c carries out sequential record of the image information transmitted to the magnetic-recording tape contained inside from the program transfer section 19.

[0053] Only the information for which it asks from the information currently recorded temporarily by this can be chosen and saved.

[0054] In addition, although [the gestalt of this operation / the code and starting address which point out 2nd recording device 20-c] sent to the program transfer section 19 via the selection reception section 18 from the selection information generation section 15, it is good though directly delivered by the program transfer section 19 from the selection information generation section 15.

[0055] Moreover, although record processing of error detection correction coding, a modulation, etc. is performed to the output bit stream which a receive section 12

restores to the recording system signal-processing section 13 with the gestalt of this operation, and is sent out, though processing of error detection correction coding of the record processing is not performed, it is good.

[0056] Moreover, although [the gestalt of this operation / all the 2nd recording apparatus (20-a, 20-b, 20-c)] it is the digital videocassette recorder recorded on videotape on a magnetic-recording tape, all or the part of them may be the recording apparatus recorded on videotape to a magnetic disk or a magneto-optic disk, and does not restrict to digital one. In short, what is necessary is just equipment which can be recorded on videotape.

[0057] Moreover, although [the gestalt of this operation / program transfer equipment 19] the information read from the 1st recording device 14 is transmitted for any of the 2nd recording device (20-a, 20-b, 20-c) being as it is. It is good, though it transmits for any of the 2nd recording device (20-a, 20-b, 20-c) being after performing processing of a recovery, elongation, an error correction decryption, etc. to the information read from the 1st recording device 14.

[0058] Moreover, although [the gestalt of this operation] one selected program is transmitted for any of the 2nd recording device (20-a, 20-b, 20-c) being, it is good though two or more selected programs are transmitted to all or some of the 2nd recording device (20-a, 20-b, 20-c), respectively. In this case, what is necessary is for the selection actuation using the program list 22 and the condition list 25 to be made to be repeated, and just to enable it to set up one or more black dots 26 also to the selection column of the condition list 25 until it prepares the completion key of selection in remote control 16 and that key is pressed. At this time, though the cursor which shows that it was chosen as the bottom of the already chosen program name in the program list 22 displayed on 2nd henceforth is displayed, it is good.

[0059] Moreover, although [the gestalt of this operation] the program list 22 and the condition list 25 are used, another list may be used and it is not necessary to use a list. When not using a list, though the selection information generation section 15 chooses a program from the 1st recording device 14 based on the G code which the operator inputted using the ten key of remote control 17, it is good. In this case, it can reserve also about the program of the past of less than 24 hours. In short, the program selection means of this invention just chooses at least one program currently recorded on the 1st storage based on selection by the operator.

[0060] It explains referring to drawing 9 which is the block diagram about the information recording device concerning this invention which is the gestalt of the 2nd operation.

[0061] Although an operator needs to choose a program before the information currently recorded temporarily is overwritten and eliminated with the information recording device of the gestalt of the 1st operation before that, when you forget it, the program which should transmit essentially and should be recorded independently will be eliminated. The information recording device of the gestalt of this operation is

a thing for this cure, and transmits the program corresponding to the keyword which the operator inputted beforehand to the 2nd recording device.

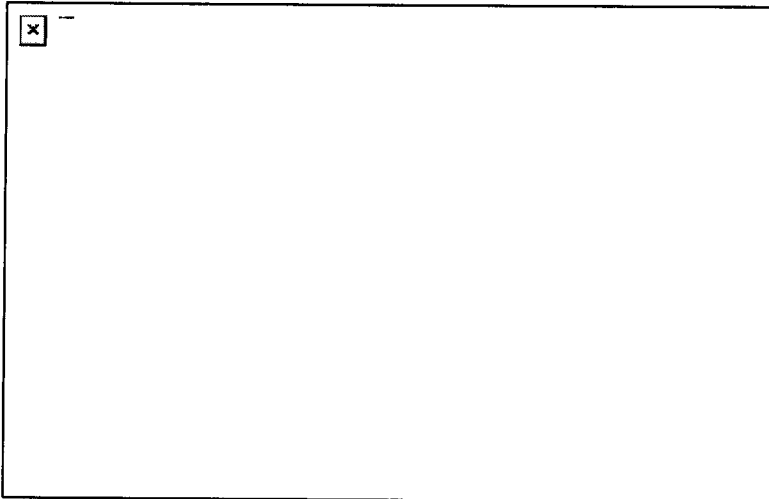
[0062] If based on the information recording device of the gestalt of the 1st operation, the information recording device of the gestalt of the 2nd operation is further equipped with the record selection section 31. The record selection section 31 is a control unit which sends out the inputted program for any of the 1st recording device 14 or the program transfer section 19 being based on the keyword which inputted the program sent out from the recording system signal-processing section 13, and was received by remote control 17 and the selection reception section 18. The record selection section 31 of an initial state is set up so that all the programs inputted from the recording system signal-processing section 13 may be sent out to the 1st recording device 14.

[0063] Next, actuation of the gestalt of this operation which is different to the gestalt of the 1st operation is explained. Drawing 10 is drawing showing the example of the menu which displayed the program genre information included in SI in the shape of a tree. If an operator presses the predetermined key in remote control 17, the code corresponding to the key will be received in the selection reception section 18. The selection information generation section 15 displays on Screen 23 of a display 16 the menu containing the keywords (a sport, news, variety, etc.) shown to the hierarchy 1 of program genre information based on the code received in the selection reception section 18. An operator will operate the arrow key of the four directions in remote control 17, and one keyword will be chosen from the menu displayed on Screen 23.

[0064] For example, the keyword is chosen by displaying the black dot 26 illustrated in drawing 8 in the column of a desired keyword, and pressing the selection key in remote control 17. If the operator chose the sport, the menu which contains keywords, such as a hierarchy's 2 ball game and land, continuously is displayed on Screen 23. Supposing a ball game is chosen from this inside, the menu which contains keywords, such as a hierarchy's 3 soccer and baseball, continuously will be displayed on Screen 23. If the operator should choose from this inside the keyword "soccer", the selection information generation section 15 will select only the program relevant to soccer out of the 1st recording device 14, will create the following automatic selection race card as shown in (Table 1), and will display it on Screen 23.

[0065]

[Table 1]



[0066] About the actuation in the case of making the program chosen from the 1st recording device 14 based on this displayed automatic selection race card save at the 2nd recording device, since it is the same as that of the gestalt of the 1st operation, explanation here is omitted.

[0067] If an operator does not perform actuation of what to the displayed automatic selection race card, either, all the programs included in the automatic selection race card are automatically transmitted to all or some of the 2nd recording device (20-a - 20-c).

[0068] This automatic selection race card is memorized by this equipment, and can be called by actuation of remote control 17 at any time. A program not to save is eliminable from an automatic selection race card by an operator's calling this automatic selection race card, displaying a black dot 26 on the column corresponding to an unnecessary program, and pressing a selection key. That is, this automatic selection race card is updated every day so that an operator's needs may be suited.

[0069] Next, another actuation of the gestalt of this operation is explained. Based on the automatic selection race card memorized by this information recording device (RAM or the 1st recording device 14), the record selection section 31 among the programs inputted from the recording system signal-processing section 13 If there is a program corresponding to the keyword contained in the automatic selection race card, it sends out to the program transfer section 19, without sending out to the 1st recording device 14 about the corresponding program, and sends out to the 1st recording device 14 about the other program. About next actuation, it is the same as that of the gestalt of the 1st operation.

[0070] Thereby, a record failure can be prevented and saving of the storage capacity of the 1st recording device 14 is attained.

[0071] In addition, although [the gestalt of this operation] a keyword is chosen using the hierarchies 1-3 of drawing 10 , you may enable it to choose all the programs corresponding to a hierarchy's 1 keyword, for example, a sports program.

[0072] Moreover, although [the gestalt of this operation] one keyword is chosen, it is good though two or more keywords can be chosen.

[0073] Furthermore, although the record selection section 31 carried out with the gestalt of this operation based on the automatic selection race card to making a program record for any of the 1st recording device 14 or the 2nd recording device (20-a, 20-b, 20-c) being About the program which equips with and makes the timed recording of a timed recording function further, though the record selection section 31 records on the 2nd recording device directly and is not recorded on the 1st recording device, it is good.

[0074] In addition, it may be aimed at the music program by the digital audio signal although aimed at the program with an image with the gestalt of the above-mentioned implementation. In short, what is necessary is just the information on voice and/or an image.

[0075] Moreover, although [the gestalt of the above-mentioned implementation / each of the component of an information recording apparatus] constituted in hard based on the block diagram shown in drawing 1 and drawing 2 About some of components of the information recording device of not only these but this invention, though constituted in software by the program which performs processing about the actuation explained with the gestalt of the above-mentioned implementation, and the computer by which it is started, it is not necessarily good.

[0076] In addition, a receive section 12 corresponds to the receiving means of this invention according to claim 1. The recording system signal-processing section 13 corresponds to the recording system signal-processing means of this invention. A storage 21 is equivalent to the 1st storage of this invention, and the 1st recording device 14 corresponds to the 1st record means of this invention. Remote control 17 and the selection reception section 18 correspond to the selection reception means of this invention. The selection information generation section 15 corresponds to the program selection means of this invention. The magnetic-recording tape of the 2nd recording device (20-a - 20-c) corresponds to the 2nd storage of this invention, and the 2nd recording device (20-a - 20-c) corresponds to the 2nd record means of this invention. Moreover, the selection information generation section 15 corresponds to the selection information generation means of this invention according to claim 2. Furthermore, a display 12 corresponds to the display means of this invention according to claim 3.

[0077]

[Effect of the Invention] As mentioned above, it is not necessary to reserve a program to record each time, and according to this invention, it is collectively efficient later and at least one program can be recorded on the 2nd storage of 2nd at least one record means so that clearly.

[0078] Moreover, since the program to record on the 2nd storage of the 2nd record means is temporarily recorded on the 1st storage of the 1st record means according

to this invention, the problem of failing to reserve does not occur.

[0079] Furthermore, according to this invention, a program can be edited very efficiently.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the block diagram of the information recording device concerning this invention which is the gestalt of the 1st operation.

[Drawing 2] (d) is the conceptual diagram showing the example of contents of the output bit stream sent out from 1st tuner 12-a, 2nd tuner 12-b, 3rd tuner 12-c, and 4th tuner 12-d, respectively from (a).

[Drawing 3] The 1st recording device 14 is the conceptual diagram showing signs that the data about the output bit stream sent out from a receive section 12 are recorded according to record control of the recording system signal-processing section 13.

[Drawing 4] It is drawing showing the example of generation of the selection information of a menu format.

[Drawing 5] It is drawing showing the example of a display of the program name list 22 generated in the selection information generation section 15.

[Drawing 6] It is drawing showing the example of the actuation corresponding to selection by the operator to whom it was carried out while looking at the program name list 22 with which the part was displayed.

[Drawing 7] It is drawing showing the example of the actuation corresponding to selection by the operator to whom it was carried out while looking at the program name list 22 with which the part was displayed.

[Drawing 8] It is drawing showing the example of selection of another recording device which records the image information of the program chosen by the operator.

[Drawing 9] It is the block diagram of the information recording device concerning this invention which is the gestalt of the 2nd operation.

[Drawing 10] It is drawing showing the example of the menu which displayed the program genre information included in SI in the shape of a tree.

[Description of Notations]

11-a -- The 1st antenna

11-b -- The 2nd antenna

12 -- Receive section

12-a -- The 1st tuner

12-b -- The 2nd tuner

12-c -- The 3rd tuner

12-d -- The 4th tuner
13 -- Recording system signal-processing section
14 -- The 1st recording device
15 -- Selection information generation section
16 -- Display
17 -- Remote control
18 -- Selection reception section
19 -- Program transfer section
20-a -- The 2nd recording device
20-b -- The 2nd recording device
20-c -- The 2nd recording device
21 -- Storage
22 -- Program list
23 -- Screen
24 -- Cursor
25 -- Condition list
26 -- Black dot
30 -- Record selection section
